Request to Archive
With The National Centers for Environmental Information
For Integrated POES/MetOp-B SEM Raw Data
Provided by NOAA>OSD

2013-02-14

This information will be used by NCEI to conduct an appraisal and make a decision on the request.

1. Who is the primary point of contact for this request?

Janet Green

NGDC

Data Manager

303-497-6686

janet.green@noaa.gov

Calls taken by Janet Machol.

2. Name the organization or group responsible for creating the dataset.

NOAA SOCC

3. Provide an overview summarizing the scope of data you want to archive. Describe the outputs, data variables, including their measurement resolution and coverage.

We wish to archive the data from SEM-2 instrument suite on the NOAA POES and MetOp satellites that provides measurements of electrons and protons over a range of energy levels. About 200 MB/day total for the six MetOp and POES satellites are sent from SOCC. The full POES/MetOp data set will consist of raw and processed data. There is a separate agreement for each piece. This agreement covers only the raw data files sent down by each satellite every 90 minutes (once every orbit).

4. What is the time period covered by the dataset? (YYYY-MM-DD, YYYY-MM or YYYY)

From 2011-04-30

Ongoing as continuous updates to the data record

5. Edition or version number(s) of the dataset:

1

6. Describe the level to which the data are processed. For example, are these unprocessed raw observations, derived parameters, quality controlled or inter-calibrated data, etc.?

These are unprocessed raw data. The data are telemetered to the ground once per 90 minute orbit(or twice in the case of MetOp-A). The are collected and packaged into level 1-b incremental files by NSOF with additional information such as location and quality.

7. Approximate date when the dataset was or will be released to the public:

2013-01-01

8. Who are the expected users of the archived data? How will the archived data be used?

A wide range of users will have interest in the POES/MetOp data. However, it is expected that the majority of users

will access the processed data and not the raw datafiles. The main user of the raw data is NGDC. NGDC is responsible for processing the raw data into higher level data products. Those interested in the raw data will be users who wish to do their own highly detailed processing.

9. Has the dataset undergone user evaluation and/or an independent review process? Did NCEI participate in design reviews?

The POES and MetOp particle data have been used in too many peer-reviewed publications to mention. The raw data files have not been documented in any peer reviewed journals. They are documented in some user documents provided by SWPC.

10. Describe the dataset's relationship to other archived datasets, such as earlier versions or related source data. If this is a new version, how does it improve upon the previous version(s)?

The POES/MetOp data have previously been collected and processed at SWPC and sent to NGDC. The SWPC dataset includes both a raw and processed from. The raw data sent from SWPC is different than the data we will archive here. The raw data sent from SWPC is actually a slightly processed form of the data with a lot of the information sent from SOCC stripped off.

11. List the input datasets and ancillary information used to produce the data.

NOAA-15,16,17,18,19
METOP-A
METOP-B

12. List web pages and other links that provide information on the data.

The metadata will comply with ISO 19115.
The raw incremental data is in the binary form sent by SOCC.

13. List the kinds of documents, metadata and code that are available for archiving. For example, data format specifications, user guides, algorithm documentation, metadata compliant with a standard such as ISO 19115, source code, platform/instrument metadata, data/process flow diagrams, etc.

1. Internal Users Manual
   External Users Manual
   Systems Maintenance Manual
2. http://ngdc.noaa.gov/stp/satellite/poes/documentation.html - The website provides descriptions of current POES data available at NOAA/NGDC.

14. Indicate the data file format(s).

1. binary form sent from SOCC

15. Are the data files compressed?

No

16. Provide details on how the files are named and how they are organized (e.g., file_name_pattern_YYYYMM.tar in monthly aggregations).

The incremental files, such as file NSS.SEMX.NL.D11045.S1703.E1828.B5360708.GC are named with the following convention. The first 3 letters do not change. The next 4 letters stand for the SEM instrument. The next 2 letters indicate the satellite. M2 corresponds to MetOp-2, NK corresponds to NOAA-15, NL corresponds to NOAA-16, NM corresponds to NOAA-17, NN corresponds to NOAA-18 and NP is NOAA-19. The text after the first period, D11045 gives the 2 digit year and three digit day of year. The next bit of text, S1703 gives the UT start time of the data file or

17:03. The following text gives the UT end time. The last 2 letters give the downlink station.

17. Explain how to access sample data files and/or a file listing for previewing. If it is not available now, when will it be available?

The data are currently coming in to an ngdc server which I don't know. But they are then made available to the processing software on semprocess at /nfs/stp_sem_proc/ingest

18. What is the total data volume to be submitted?

<u>Continuous Data: data volume rate for a continuous data production.</u>

Total Data Volume Rate: 170MB per Day

Data File Frequency: 112 per Day

Data Production Start: 2011-05-31

19. Are later updates, revisions or replacement files anticipated? If so, explain the conditions for submitting these additional data to the archive.

No additional updates, revisions or replacement data are anticipated.

20. Describe the server that will connect to the ingest server at NCEI for submitting the data.

Physical Location: Camp Springs, Maryland

System Name: Environmental Satellite Processing Center (ESPC)

System Owner: NESDIS

Additional Information: Add comments as needed on applicable data types, etc.

21. What are the possible methods for submitting the data to NCEI? Select all that apply.

1. FTP PULL

22. Identify how you would like NCEI to distribute the data. Web access support depends on the resources available for the dataset.

1. Direct download links

23. Will there be any distribution, usage, or other restrictions that apply to the data in the archive?

No known constraints apply to the data.

24. Discuss the rationale for archiving the dataset and the anticipated benefits. Mention any risks associated with not archiving the dataset at NCEI.

The data are used by NOAA customers to mitigate various space weather impacts such as radiation damage to satellites, damage to power grids, and GPS errors. In particular:

Airlines use products derived from the POES/Metop energy flux and high energy ion data to identify areas of communication loss.

Power companies use products derived from the POES/Metop energy flux data to manage the grid and avoid damage and black outs due to ground induced currents.

GPS customers use products derived from POES/Metop energy flux measurements to quantify GPS errors.

Satellite operators use medium and high energy particle flux to assess and mitigate satellite malfunctions.

Satellite launch operators use medium and high energy particle flux to determine launch safety.

NASA uses medium and high energy particle flux from POES/Metop to assess safety risks to astronauts and equipment.

Scientists use this data to develop and verify models of the Earth's space environment.

25. Are the data archived at another facility or are there plans to do so? Please explain.

No

26. Is there an existing agreement or requirement driving this request to archive? Have you already contacted someone at NCEI?

Data from POES/Metop space weather sensors are needed to satisfy several priority 1 Consolidated Observational Requirements List(CORL) requirements including low Earth orbit (LEO) auroral particle energy flux, medium and high energy electron flux, and energetic ion flux.

NAO 212-15 requires support for the "end-to-end data management lifecycle" of data, and this request supports the archival provisions stated therein.

27. Do you have a data management plan for your data?

No

28. Have funds been allocated to archive the data at NCEI?

No

29. Identify the affiliated research project, its sponsor, and any project/grant ID as applicable.

SEM-2

30. Is there a desired deadline for NCEI to archive and provide access to the data?

Archive by: 2026-01-01

Accessible by:

31. Add any other pertinent information for this request.

None